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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,334	06/27/2001	Qing Ma	42390P10606	6477

8791 7590 01/24/2003

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EXAMINER

COLEMAN, WILLIAM D

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/894,334

Applicant(s)

MA ET AL.

Examiner

W. David Coleman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on November 13, 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed November 13, 2002 have been fully considered but they are not persuasive.
2. Applicants contend that Ghezzi et al., U.S. Patent 6,127,812 herein known as Ghezzi fails to teach the claimed invention. Specifically, Applicants contend that Ghezzi does not teach or suggest the desirability of exposing a portion of the sacrificial material, removing a portion of the second structural material, or of patterning the sacrificial material as recited in the claims.
3. In response to Applicants contention that Ghezzi fails to disclose exposing a portion of the sacrificial material, please see FIG. 11 where sacrificial material 240 is exposed over structure 32/34. With regards to removing a portion of the second structural, please see FIGS. 9-12. Please note that in FIG. 9, layer 240 which is a sacrificial layer is formed over layer 228. Next a structural layer (not numbered, but is a very thin layer is deposited over layer 240. As seen in FIG. 11 a portion of the very thin layer is removed which results in the underlying layer of capacitor plate 30 as seen in FIG. 12.
4. Applicants contend that Ghezzi fails to teach patterning the sacrificial material as recited by Applicants amended claim 8.
5. In response to Applicants contention that Ghezzi fails to teach patterning the sacrificial material, Applicants are directed to FIGS. 5 and 6 where a conformal deposit of sacrificial layer 224 is formed over 222 as seen in FIG. 5 and then patterned in FIG. 6.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Ghezzi et al., U.S. Patent 6,127,812.

9. Pertaining to claim 1, Ghezzi discloses a semiconductor process as claimed. See **FIGS. 11-12**, where Ghezzi teaches a method comprising:

over an area of a substrate **214**, forming a plurality of three dimensional first structures; following forming the first structures **32**, conformally introducing a sacrificial material **224** over the area of the substrate; introducing a second structural material **34** over the sacrificial material; exposing a portion of the sacrificial material; and removing the sacrificial material.

10. Pertaining to claim 3, Ghezzi discloses the method of claim 2, wherein exposing a portion of the sacrificial material comprises removing a portion of the second structural material.

11. Pertaining to claim 4, Ghezze discloses the method of claim 1, prior to introducing the second structural material, further comprising patterning the sacrificial material.
12. Pertaining to claim 5, Ghezze discloses the method of claim 1, wherein the first structural material comprises silicon and the sacrificial material comprises silicon dioxide and introducing the sacrificial material comprises growing.
13. Pertaining to claim 6, Ghezze discloses the method of claim 1, wherein removing the sacrificial material comprises suspending the second structural material as a second structure coupled to the first structures.
14. Pertaining to claim 7, Ghezze discloses the method of claim 1, wherein patterning the first structures defines a plurality of first areas of the portion of the substrate occupied by the first structures and at least a second area of the portion of the substrate free of the first structures, and introducing the sacrificial material comprises introducing the sacrificial material at least over the second area.
15. Pertaining to claim 8, Ghezze discloses a method comprising: over an area of a surface of a substrate, lithographically patterning a plurality of first structures, the plurality of first structures having a first dimension about the surface of the substrate and a second different dimension; following forming the first structures, conformally introducing a sacrificial material layer over the area of the substrate; patterning the sacrificial material; forming second structures over the sacrificial material; and removing the sacrificial material.
16. Pertaining to claim 10, Ghezze discloses the method of claim 8, prior to removing the sacrificial material, further comprising exposing a portion of the sacrificial material.

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17. Pertaining to claim 11, Ghezze discloses the method of claim 10, wherein exposing a portion of the sacrificial material comprises removing a portion of the second structural material.

18. Pertaining to claim 12, Ghezze discloses the method of claim 8, wherein the sacrificial material comprises silicon dioxide and introducing the sacrificial material comprises growing.

19. Pertaining to claim 13, Ghezze discloses the method of claim 8, wherein removing the sacrificial material comprises suspending the second structures by the first structures.

### *Conclusion*

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

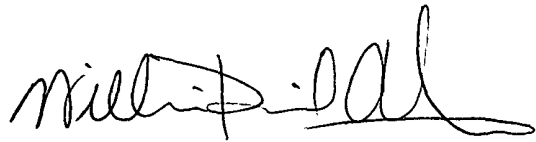
21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Coleman whose telephone number is 703-305-0004. The examiner can normally be reached on 9:00 AM-5:00 PM.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in black ink, appearing to read 'W. David Coleman', with a stylized, flowing script.

W. David Coleman  
Examiner  
Art Unit 2823

WDC  
January 22, 2003